PERTHES DISEASE

Perthes disease usually is seen in children 2-12 years of age and is five times more common in boys than girls. It was originally described, nearly a century ago, as a peculiar form of childhood arthritis of the hips. Although the term 'disease' is still used, it is now known that Perthes is a condition characterized by a temporary loss of blood supply to the hip, not a disease. When the blood supply is stopped, the bone of the femoral head (The 'ball' of the 'ball and socket' joint of the hip.) dies and intense inflammation and irritation develop.

X-rays taken because of limping and mild pain usually diagnose the condition. The child may have had these symptoms intermittently over a period of weeks or even months. Pain sometimes is caused by muscle spasms that result from hip irritation. The pain may be felt in other parts of the leg such as the groin, thigh or knee. When the hip is moved, the pain worsens. Rest often relieves the pain.

The child with Perthes can expect to have several x-rays taken over the course of treatment, which may be two years or longer. The x-rays usually will look worse before gradual improvement is noted.

Girls tend to have more extensive involvement and, therefore, have a generally poorer prognosis than boys. Usually, treatment for very young children (i.e., those 2-6 years of age) with minimal x-ray changes consists of observation. For the older child vigorous treatment is necessary to maintain the hip range of motion and minimize development of

There are three components of treatment:

1. Reduce the swelling or inflammation in the hip joint
2. Restore an improved hip range of motion
3. By x-ray, keep the hip deep within the socket during the healing process

Hip Joint Inflammation

Anti-inflammatory medications such as Advil or Naprosyn are used to decrease the hip joint inflammation or synovitis. These medicines are often used for months. The medications will be adjusted or discontinued depending on the healing stage.

Restore Hip Range of Motion

It is not desirable for the child to walk on a stiff hip, as this may promote contracture of muscle and possibly flattening of the femoral head. To help restore range of motion, Physical therapy, ambulation with crutches, or bed rest in traction may be needed.

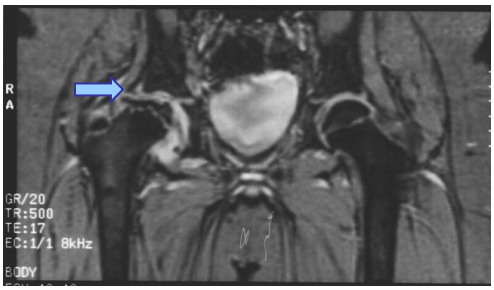
Your child will be shown some simple exercises to do until the final stage of healing has occurred.

Hip Abduction: The child will lie on his back, keeping knees bent and feet flat. Place your hands on the child's knees and resist as he pushes out, then resist as he squeezes knees together.

Hip Rotation: With the child on his back and legs out straight, roll the entire leg inward and outward.

Maintain Hip Postion in the Socket

If the range of motion (ROM) cannot be maintained or if x-rays or a MRI indicate a progressive deformity is developing, a brace or cast may be used to keep the femoral head (ball) contained within the acetabulum (socket).



Petrie casts are two long leg casts with a wooden bar that hold the legs spread apart in a position similar to the letter "A". The application of the initial Petrie cast usually is performed in the operating room. During the procedure, the surgeon usually will place a small amount of dye into the hip joint (Arthrogram) to aid in evaluating the degree of "flattening" of femoral head. Occasionally, the adductor longus muscle in the groin must be lengthened through a small incision to permit rotation of the hip into a more favorable position.

Following removal of the cast (usually in four to six weeks), the patient is reassessed for the appropriateness of continuing brace treatment with the cast or a removable orthosis such as a hip abduction brace. This treatment may be continued until range of motion is maintained or the hip enters the final stage of the healing process.

Surgery

Surgical treatment realigns the bony structures so that the head of the femur is placed deep within the acetabulum. Fixation is maintained with screws and plates that will be removed at a later date. In some cases, the socket must also be deepened because the ball actually has enlarged during the healing process and no longer fits snugly within. After either procedure, the child is often placed in a cast from the chest to the toes for six to eight weeks.

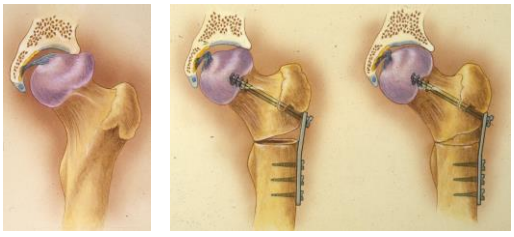


Figure A shows the femoral head becoming misshapen
Figure B shows the femoral head within the socket after the osteotomy
Figure C shows the healed osteotomy and a slightly enlarged femoral head

After the cast is removed the child will participate in physical therapy with protected weight bearing of the affected leg until X-rays reveal the final stages of the healing are under way.

Conclusion

Perthes is a complex process in children and the stages and various forms of treatment may be confusing. Treatment of Perthes may require otherwise healthy children to submit to periods of immobilization or alterations in their usual activities.
The long-term prognosis is good in most cases. After 18 months to two years of treatment, the majority of children return to normal activities without major limitations.

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